

What is claimed is:

1. An optical filter, comprising:
an input unit for receiving a wavelength division multiplexed (WDM) optical signal via an optical transmission medium and outputting a plurality of optical signals that have different incidence angles according to the wavelengths each of said plurality of optical signals; and
a filter for receiving said plurality of optical signals from the input unit and separating the WDM optical signal into a plurality of optical signals having different wavelengths using the difference between resonance lengths according to the different incidence angles.

2. The optical filter of claim 1, wherein a lens is used as the input unit.

3. The optical filter of claim 1, wherein etalon is used as the filter.

4. An optical channel monitoring apparatus, comprising:
an optical filter for receiving a wavelength division multiplexed (WDM) optical signal from an optical transmission medium, making the incidence angle of each wavelength of the WDM optical signal different from each other, and separating the WDM optical signal into a plurality of optical signals having different wavelengths using the difference between resonance lengths according to the different incidence angles; and

7 a detector for detecting the intensity of each of said plurality of optical signals having
8 different wavelengths as an electrical signal.

1 5. An optical channel monitoring method, comprising the steps of:
2 receiving a wavelength division multiplexed (WDM) optical signal from an optical
3 transmission medium and outputting a plurality of optical signals that have different incidence angles
4 according to the wavelengths of the optical signals;
5 receiving said plurality of optical signals and separating the WDM optical signal into a
6 plurality of optical signals having different wavelengths using the difference between resonance
7 lengths according to the different incidence angles; and
8 detecting the intensity of each of said plurality of optical signals having different
wavelengths and converting said intensity into a corresponding plurality of electrical signals.

2 6. The optical filter of claim 1, further comprising a detector receiving said plurality of
optical signals having different wavelengths and converting them to electrical signals.

1 7. The optical filter of claim 6, further comprising a beam size controller to amplify said
2 plurality of optical signals having different wavelengths in order to be detected by said detector.

1 8. The optical filter of claim 7, further comprising a microprocessor for determining the

wavelength and the optical signal to noise ratio of each of said plurality of optical signals having different wavelengths.

9. The apparatus of claim 4, further comprising an input unit for receiving said wavelength division multiplexed (WDM) optical signal via said optical transmission medium and outputting optical signals that have different incidence angles according to the wavelengths of the optical signals.

10. The apparatus of claim 9, further comprising an optical amplifier for allowing said plurality of optical signals having different wavelengths to be detected by said detector.

11. The apparatus of claim 4, said optical filter being a Fabry-Perot etalon.

12. The apparatus of claim 4, further comprising a microprocessor that determines the wavelength and the optical signal to noise ratio for each of said plurality of optical signals having different wavelengths from said plurality of electrical signals produced by said detector.

13. The method of claim 5, further comprising the step of inputting each of said plurality of electrical signals into a microprocessor.

14. The method of claim 13, further comprising the step of determining the wavelength and the optical signal to noise ratio of each of said plurality of optical signals having different wavelengths by processing said plurality of electrical signals by said microprocessor.

15. The method of claim 14, further comprising the step of amplifying said plurality of optical signals having different wavelengths before said plurality of optical signals impinge on said detector.

16. The method of claim 15, a Fabry-Perot etalon is used to separate said WDM signal into said plurality of optical signals having different wavelengths.